REMARKS

This Reply is in response to the Non-Final Office Action mailed on June 1, 2004 in which Claims 1-11, 14-23, 29-38, 40 and 41 were rejected. With this Reply, Claims 1, 11, 19, 22, 31, 35 and 40 are amended. Claims 42-59 are added. Claims 1-11, 14-23, 29-38, 40, 41 and 42-59 are presented for reconsideration and allowance.

I. Examiner Interview Summary.

On July 14, 2004, a telephonic interview was held between Examiner Liang and Applicant's attorney, Todd A. Rathe. During the interview, the Examiner provided a clarification as to the current rejections of Claims 1, 19, 22, 31 and 40 based upon Richtsmeier, U.S. Patent No. 5,428,384. Although no agreement was reached, Applicant wishes to thank Examiner Liang for the opportunity discuss the rejections.

II. Rejection of Claims 1, 5-6, 14-20, 22-23, 29, 31-32, 35-38 and 40 Under 35 U.S.C. § 102(b) Based Upon Richtsmeier.

Page 2 of the Office Action rejected Claims 1, 5-6, 14-20, 22-23, 29, 31-32, 35-38 and 40 under 35 U.S.C. § 102(b) as being anticipated by Richtsmeier et al., U.S. Patent No. 5,428,384. With this Reply, independent Claims 1, 19, 22, 31 and 40 are amended. Claims 1, 5-6, 14-20, 22-23, 29, 31-32, 35-38 and 40, as amended, overcome the rejection based upon Richtsmeier.

A. Claims 1, 19, 22, 31, 35 and 40.

Independent Claim 1 recites a method for operating a printing mechanism which includes the step of directing an airflow having a first directional component away from a printzone so as to not intersect the printzone. Independent Claims 19, 22, 31, 35 and 40 each recite an apparatus configured such that an airflow having a directional component away from the printzone so as to not intersect the printzone is created.

Richtsmeier fails to disclose a method or an apparatus in which an airflow having a directional component away from the printzone so as to not intersect the printzone is established. In contrast, the airflow created by crossflow fan 90 intersects printzone of print region 56 prior to flowing away from the print region. Accordingly, independent Claims 1, 19, 22, 31 and 40, as amended, overcome the rejection based upon Richtsmeier. Claims 5-6, 14-18, 20, 23, 29, 32, 36-38 depend from independent Claims 1, 19, 22, 31, 35 and 40 and overcome the rejections for the same reasons.

III. Rejection of Claims 2-4, 7-11, 21, 30, 33-34 and 41 Under 35 U.S.C. § 103(a) Based Upon Richtsmeier and Smith.

Page 7 of the Office Action rejected Claims 2-4, 7-11, 21, 30, 33-34 and 41 under 35 U.S.C. § 103(a) as being unpatentable over Richtsmeier et al., U.S. Patent No. 5,428,384 in view of Smith, U.S. Patent No. 5,020,244. Claims 2-4, 7-11, 21, 30, 33-34 and 41 depend from independent Claims 1, 19, 22, 31, 35 and 40 and overcome the rejections for the same reasons discussed above with respect to such claims. In particular, neither Richtsmeier nor Smith, alone or in combination, disclose a method step or apparatus configured to direct airflow at the first surface having a first directional component away from a printzone so as to not intersect the printzone and a second directional component urging the media against support apparatus or stabilizing media in the printzone. In addition, Claims 7, 11, 21, 30 and 33 are further patentably distinct over the prior art of record for the additional reasons below.

A. Claims 7, 21, 30 and 33.

Each of Claims 7, 21, 30 and 33 recites that the airflow is heated by a heat source and includes resistive elements of an electronic control circuit which supports the operation of the printing mechanism. In other words, the processor or control circuit is cooled by the airflow. The airflow is heated by heat emitted from the processor.

Neither Richtsmeier nor Smith, alone or in combination, disclose or suggest heating of the airflow being directed towards the print media using heat emitted from a controller or a control circuit. Page 8 of the Office Action acknowledges that Richtsmeier fails to disclose an electronic control circuit and resistive elements which serve as a heat source for the airflow. As a result, pages 9 and 10 attempt to additionally rely upon Smith, U.S. Patent No. 5,020,244 for the rejection of such claims. The Office Action specifically refers to column 5, lines 36-63, of Smith and power source 86 of Figure 6. However, sensing and regulating logic 84 and power source 86 shown in Figure 6 of Smith are merely schematic illustrations of such components. As indicated by column 5, lines 53-63 of Smith, sensing and regulating logic 84 adjusts the temperature of heating element 30. Thus, Smith utilizes heating element 30, not sensing and regulating logic 84, to heat the airflow created by impellers 18. Nowhere does Smith teach or even suggest that heat emitted from sensing and regulating logic 84 may be used to heat the air being driven by impellers 18. Accordingly, Claims 7, 21, 30 and 33 overcomes the rejection based upon Richtsmeier and Smith for this additional reason.

B. Claim 11.

Claim 11, as amended, depends from Claim 9 which depends from Claim 1. Claim 9 recites that the airflow carries heat energy taken from a heat source otherwise producing waste heat energy. Claim 11 specifies that the waste heat energy originates from motor components. Neither Richtsmeier nor Smith, alone or in combination, disclose or suggest a method wherein waste heat energy from motor components is used to heat airflow directed to the printing surface. Page 8 of the Office Action acknowledges that Richtsmeier fails to disclose this feature of Claim 11. As a result, page 10 of the Office Action additionally attempts to rely upon Smith to satisfy this deficiency. In particular, the Office Action asserts that the use of the waste heat energy used to heat the airflow and originated from motor components is naturally suggested in view of column 5, lines 41-46. However, nowhere does column 5, lines 41-46 imply that heat emitted from motor components is utilized to heat airflow driven by impellers 18. In fact, Figure of Smith appears to illustrate

motor 50 being blocked by housing 14 and housing wall 58. Thus, Claim 11, as amended, overcomes the rejection based upon Richtsmeier and Smith for this additional reason.

IV. Added Claims.

With this Reply, Claims 42-59 are added. Added Claims 42-59 are believed to be patentably distinct over the prior art of record.

A. Claims 42-48.

Claims 42-48 depend from Claim 1 and further recite additional features which are believed to be patentably distinct over the prior art of record. Claim 42 recites the airflow directed from a vent having an opening between the ink dispensing element and the first surface of the media. In contrast, crossflow fan 90 has an opening above the printhead of carriage 54 and the print media. Claim 43 recites that the media is passed through the printzone in a first direction and that the first directional component of the airflow is also in the first direction. In contrast, the airflow from crossflow fan 90 is in an opposite direction as compared to the direction in which the print media is moved.

Claim 44 recites that the airflow is directed through a conduit extending towards the surface and terminating at a vent proximate to and angularly facing the first surface. Richtsmeier fails to disclose a conduit through which airflow is directed from crossflow fan 90, extends towards the surface and terminates at a vent proximate to and angularly facing the surface.

Claim 45 recites an ink dispensing element as provided by a printhead at a first end of a cartridge having a second opposite end, wherein the conduit extends from the first end to the second end. Richtsmeier fails to disclose any conduit which extends from the printhead of cartridge 54 to the opposite end of the cartridge 54.

Claims 46-48 recite a method of varying a magnitude of the airflow across the surface. Richtsmeier fails to disclose varying the magnitude of airflow across the

surface. Accordingly, added Claims 42-48 are believed to be patentably distinct over the prior art of record for these additional reasons.

B. Claims 49-56.

Claim 49 comprises a printing mechanism which includes a pressurized air source having an opening proximate the print surface and angularly facing away from the printzone so as to direct pressurized air against the print surface to stabilize the print surface within the printzone and such that pressurized air does not intersect the printzone. As noted above with respect to Claims 1, 19, 22, 31, 35 and 40, neither Richtsmeier nor the prior art of record disclose a pressurized air source which directs pressurized air against the print surface so as to stabilize a print surface within the print zone and such that the pressurized air does not intersect the printzone. Added Claims 50-56 depend from Claim 49 and are believed to be patentably distinct over the prior art of record for the same reasons.

C. Claim 57.

Added Claim 57 recites a printing mechanism which includes a printhead, a controller configured to generate control signals directing the operation of the printing mechanism and a pressurized air source. The pressurized air source creates an airflow which is configured such that the airflow is heated by heat emitted from the controller. The pressurized air source is further configured to direct the heated airflow against the print surface. The prior art of record fails to disclose a printing mechanism wherein air heated by heat emitted from a controller is directed at a print surface.

D. Claim 58.

Added Claim 58 recites a printing mechanism which includes a printhead and a pressurized air source. The pressurized air source has at least one vent opening proximate the print surface. The pressurized air source is configured to create a first airflow having a first magnitude at a first region of the print surface and a second airflow having a second distinct magnitude at a second distinct region of the print

surface. The prior art of record fails to disclose a printing mechanism and a pressurized air source which is configured to create distinct airflows having distinct magnitudes at distinct regions of a print surface.

E. Claim 59.

Added Claim 59 recites a printing mechanism which includes a printhead, a support apparatus supporting a printing surface and a pressurized air source. The pressurized air source is configured to direct an airflow at the print surface such that the print surface is stabilized against the support apparatus in the printzone and such that the airflow does not create air turbulence at the print surface. The prior art of record fails to disclose a printing mechanism which includes a pressurized air source and is configured to direct an airflow at a print surface such that the print surface is stabilized against a support apparatus in the printzone and such that the airflow does not create air turbulence at the print surface in the printzone. For example, Richtsmeier specifically discloses that one of the purposes of the crossflow fan is "to cause turbulence at the medium surface being printed." (col. 3, lines 32-35). Accordingly, each of added Claims 42-59 are believed to be patentably distinct over the prior art of record and is presented for consideration and allowance.

V. Conclusion.

After amending the claims as set forth above, Claims 1-11, 14-23, 29-38, 40, 41 and 42-59 are now pending in this application.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit

any overpayment, to Deposit Account No. 08-2025. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 08-2025. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 08-2025.

Respectfully submitted,

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